

## Research on the Training Method of Students' Innovative Ability in Computer Teaching Based on Computing Thinking in Colleges and Universities

Luo Lihua

Xishuangbanna Vocational and Technical Institute, Yunnan, Jinghong, 666100, China

**Keywords:** Innovation; Computer; Training; Educational Ideas

**Abstract:** Conscious and purposeful cultivation of students' innovative thinking and innovative ability is the central content of quality education and the educational goal and direction of higher education. Education bears a special mission in cultivating national innovative spirit and creative talents. The era calls for innovative talents, and the key to innovative talents lies in educational innovation. Computer specialty has the characteristics of wide knowledge, strong applicability and fast updating of knowledge. This characteristic determines that the teaching of computer specialty has unique advantages in carrying out innovative education. Modern educational concepts and theories put the cultivation of students' innovative ability in an extremely important position, and the teaching of any subject must pay attention to the cultivation of students' innovative ability. Based on the current situation of computer teaching in colleges and universities, this paper rationally analyzes the problems existing in computer teaching in our country's colleges and universities, and discusses the cultivation methods of students' innovative ability in computer teaching in colleges and universities.

### 1. Introduction

China's information technology is developing rapidly. In order to keep pace with the times and better adapt to the development of society and economy, we need to improve our computer knowledge and update our knowledge [1]. Innovation ability has become a free and independent activity, so vigorously promoting innovation ability is also in line with the trend of the times and the needs of society. Only through innovation can there be progress and further development. Innovative education is an educational practice with the basic value orientation of cultivating people's innovative spirit and innovative ability. It aims at cultivating workers with creative desire and innovative ability and aims at exploring people's creative potential and promoting the harmonious development of people's personality [2]. In the past, the teaching methods adopted in traditional computer courses undoubtedly smashed the students' thinking and bound the hands and feet of teachers. How to improve students' ability to innovate and create is imminent [3]. All colleges and universities should keep abreast of the needs of the current society and cultivate talents that meet the needs of society. Therefore, reforming teaching methods and exploring ways to cultivate students' innovative ability have become an urgent task for computer educators.

Education shoulders a special mission in cultivating national innovation spirit and cultivating creative talents. Modern educational concepts and theories put the cultivation of students' innovative ability in an extremely important position. The teaching of any subject must focus on the cultivation of students' innovative ability [4]. The knowledge economy is a high-tech economy, a high-cultural economy, and a high-intelligence economy. The development of society mainly depends on the continuous innovation of knowledge and the rapid emergence of high-tech. All of this depends on people who are innovative, creative, and good at using knowledge. The computer major has the characteristics of wide knowledge, strong applicability and fast knowledge update [5]. This characteristic determines that the teaching of computer specialty has unique advantages in carrying out innovative education. Computer and applied technology play an extremely important role in scientific and technological research and modern management activities in various fields [6]. Based on the current situation of computer teaching in colleges and universities, this paper rationally analyzes the problems existing in computer teaching in our country's colleges and universities, and discusses the cultivation methods of students' innovative ability in computer teaching in colleges and

universities.

## 2. The Natural Conditions of Innovative Education in Computer Teaching

The old ideas of education and teaching and the trained talents no longer meet the demand for talents in the current social development during the transition from post-industrial era to knowledge-based economy. The innovation and reform of education are the needs of the times. With the rapid development of computer hardware and the incessant emergence of software designs, computer teaching has no fixed teaching content and single teaching mode [7]. Innovation activities are not castles in the air and need the support of theoretical knowledge. In other words, strong innovation ability is usually based on rich basic knowledge and basic theories. Cultivating students' computer innovation ability will help students to better invest in future work. With the increasing pressure of employment competition, schools, teachers and students are aware of the importance of innovation. They should not only master basic skills, but also have what kind of ideas. Only in this way can they excel in the competition of motivated talents.

In order to cultivate innovative ability in teaching, the first problem to be solved is the change of educational theory and educational ideological system, specifically to the change of teachers' individual educational concept. Teachers are required to realize that education should not only be a tool of training and inculcation, but also a means of developing cognition. Studying the innovative education mode is helpful to deal with all kinds of Educational Relations and optimize the structure of educational activities. The orientation and uniqueness of the educational model are determined by certain educational theories or ideas. We need to constantly explore and accumulate experience in construction. Fig. 1 is the network structure system of talent innovation ability training and management.



Fig.1. Network structure system of talent innovation ability training and management

Teachers are role models for students to learn and are benchmarks and directions for guiding students to move forward. In order to cultivate students' innovative ability in computer teaching, teachers must first have a strong sense of innovation. A creative teacher should make full use of heuristic, discussion and participation teaching methods to give students the methods of acquiring knowledge, develop students' intelligence and develop students' thinking [8]. Due to the large number and functions of software, it is impossible and unnecessary for teachers to fully explain the use of every software. While it is more conducive to cultivating students' divergent thinking, there is a great room for students to explore and think for themselves, which is conducive to cultivating students' innovative exploration ability. After self-study, teachers should check the self-study effect of students in a timely manner, summarize them, and explain the general problems that students do not understand in self-study. A creative teacher is not only taking a good class, but how to fully apply heuristic, discussion, and participatory modern teaching methods to something more important than knowledge.

### 3. Transforming Teachers' Educational Ideas is the Prerequisite of Innovative Education

#### 3.1. Constantly Renew Educational Ideas

When students' thinking activities and conclusions exceed the track designed and expected by teachers, teachers should not force students' thinking into their own thinking mode. Teachers are the organizers, guides, helpers and promoters of meaning construction in the teaching process, rather than the imparting and instilling of knowledge. The knowledge provided by the textbook is no longer what teachers teach, but what students actively construct. In the current teaching, it is often used as an adjunct to theoretical teaching, which makes theoretical teaching and experimental technology not organically combined, and experimental teaching also does not play its due role. Teachers should gradually guide students to master the ways and means to solve problems in the teaching process, let students directly participate in the exploration of teaching, give full play to students' subjective initiative, and develop students' innovation ability [9]. In computer teaching, advanced teaching technology can be applied to create a multimedia teaching environment.

In computer teaching, college teachers must adopt corresponding teaching methods according to the characteristics and acceptance of college students in order to arouse their curiosity and thirst for knowledge. In order to mobilize their enthusiasm and initiative to learn computer knowledge, lay the foundation for the cultivation and improvement of innovation ability. To meet the specific implementation requirements of multi-discipline data collection, processing and integration, and multi-discipline innovation ability training, visualization system application, etc. For example, Table 1 is a survey and statistics of the degree to which curriculum teaching achieves the educational goal of cultivating innovative ability.

Table 1 Investigation on the level of teaching achievement innovation ability education goal

Degree of realization	Complete realization	Partial realization	Not implemented
Number of people selected	13	29	26
Percentage (%)	19.1	42.6	38.2

#### 3.2. Stimulating Students' Interest in Learning

Computer teaching is not only to impart computer knowledge to students and train students' practical operation ability, but also to cultivate students' good moral cultivation, correct values and strong legal awareness in the information age. Many contents of computer teaching are close to real life, and students are more interested in it. If you set the desktop properties, students will want to make their desktop more beautiful. The selection of theoretical teaching content is an important link to do a good job in theoretical teaching, the selection of teaching materials directly affects the teaching effect, and the reasonable selection of theoretical teaching content is very important [10]. Due to the active participation of students, the creativity of every student is valued. Teachers' authority will no longer be based on the passive acceptance of students, but on the ability of teachers to promote full development through the active participation of students. Students tend to be tired and tired when learning theoretical knowledge. At this time, teachers should create and design computer teaching problems appropriately to stimulate students' interest in learning in time. On this basis, we should focus on cultivating students' innovative ability and spirit, so as to achieve a successful teaching effect.

### 4. Conclusions

In computer teaching in Colleges and universities, in order to cultivate students' innovative ability, teachers should first start from themselves, enhance their innovative consciousness, and set up brand-new educational and teaching concepts. In the course of comprehensive design, teachers should fully tap the contents of cultivating and training innovative ability, and put forward appropriate computer integrated design topics. It is an urgent historical mission entrusted to higher education workers in the new century to train new talents with comprehensive quality. In the course of classroom teaching, computer teachers should strengthen the ability of students to discover, raise

and solve problems on the basis of stimulating students'innovative consciousness. We should make use of the factors of creative education in computer teaching, boldly allow students to play freely and explore their potential creative factors. Higher education workers should have the courage to reform, explore and innovate. According to the characteristics of cultivating innovative talents, they should constantly improve teaching methods and constantly seek effective ways to cultivate innovative talents. Teachers should start from the aspects of teaching methods, teaching techniques and practical activities, so that students can learn and master basic computer skills while cultivating their good innovation ability.

## References

- [1] Zhu C, Wang D. Key competencies and characteristics for innovative teaching among secondary school teachers: a mixed-methods research. *Asia Pacific Education Review*, 2014, 15(2):299-311.
- [2] Heaysman O, Tubin D. Content teaching: innovative and traditional practices. *Educational Studies*, 2018:1-15.
- [3] Ondrusek A L, Thiele H E, Yang C. Writing Abstracts for MLIS Research Proposals Using Worked Examples: An Innovative Approach to Teaching the Elements of Research Design. *College & Research Libraries*, 2014, 75(6):822-841.
- [4] Serry T, Imms C, Froude E, et al. Preparatory teachers' perceptions of school readiness: a survey of Victorian teachers. *The Australian Educational Researcher*, 2014, 41(1):109-124.
- [5] Slantcheva-Durst, Snejana. Mechanisms of lifelong learning: the spread of innovative short-cycle higher education qualifications within national systems. *Higher Education*, 2014, 68(1):87-102.
- [6] Altunay E, Tonbul Y. Comparison of scientific research projects of education faculties. *Studies in Higher Education*, 2015, 40(6):972-987.
- [7] Lynch P, Lund P, Massah B. Identifying strategies to enhance the educational inclusion of visually impaired children with albinism in Malawi. *International Journal of Educational Development*, 2014, 39(5 Pt 1):216-224.
- [8] Chou C Y, Lin P H. Promoting discussion in peer instruction: Discussion partner assignment and accountability scoring mechanisms. *British Journal of Educational Technology*, 2015, 46(4):839-847.
- [9] Siqin T, Van Aalst J, Chu S K W. Fixed group and opportunistic collaboration in a CSCL environment. *International Journal of Computer-Supported Collaborative Learning*, 2015, 10(2):161-181.
- [10] Bogo, Marion. Field Education for Clinical Social Work Practice: Best Practices and Contemporary Challenges. *Clinical Social Work Journal*, 2015, 43(3):317-324.